

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

B21

PCT

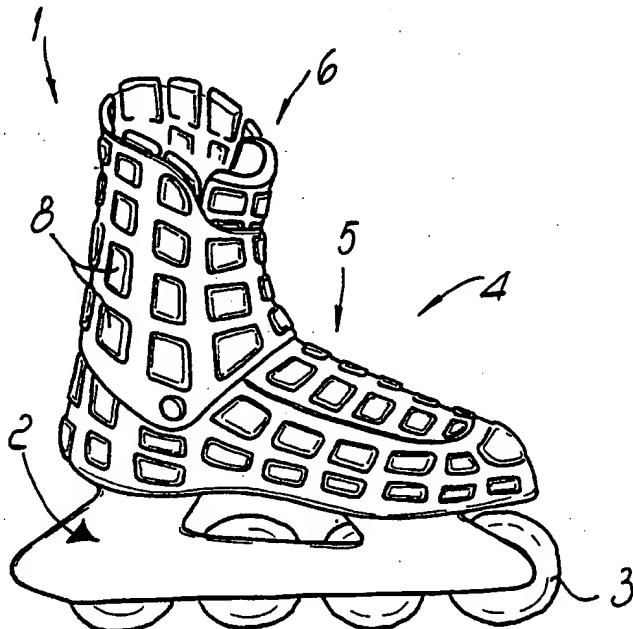
WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 :	A1	(11) International Publication Number: WO 94/06317
A43B 5/04, 5/00, 5/16 A43B 19/00		(43) International Publication Date: 31 March 1994 (31.03.94)

(21) International Application Number: PCT/EP93/02432	(81) Designated States: CA, JP, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).
(22) International Filing Date: 8 September 1993 (08.09.93)	
(30) Priority data: TV92A000104 23 September 1992 (23.09.92) IT	Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(71) Applicant (<i>for all designated States except US</i>): NORDICA S.p.A. [IT/IT]; Via Piave, 33, I-31044 Montebelluna (IT).	
(72) Inventor; and	
(75) Inventor/Applicant (<i>for US only</i>): POZZOBON, Alessandro [IT/IT]; Via Ruga, 15, I-31050 Paderno di Ponzano Veneto (IT).	
(74) Agent: MODIANO, Guido; Modiano, Josif, Pisanty & Staub, Via Meravigli, 16, I-20123 Milan (IT).	

(54) Title: SPORTS SHOE, PARTICULARLY FOR SKATES



(57) Abstract

A ventilated sports shoe, particularly usable for skates which are constituted by a frame (2) for supporting two or more wheels (3) and the shoe (4). The shoe (4) has a plurality of through seats (7) and a plurality of soft pads (8) can be arranged within the seats and protrude inside the shoe, so as to constituted a soft protective region for the user's foot and leg as well as a channel for the air inside the shoe.

SPORTS SHOE, PARTICULARLY FOR SKATES**Technical Field**

The present invention relates to a sports shoe, particularly for skates.

Background Art

Conventional skates, for example of the type with two or more aligned wheels, are essentially constituted by a
5 shoe associated with a wheel supporting frame.

The shoe, or boot, is generally constituted by a quarter articulated to a shell and is usually made of plastics.

An innerboot can be arranged inside the shell and the
10 quarter, and constitutes a padding element to improve the user's comfort.

These conventional skates have the drawback that they do not allow a transpiration, because the foot is enclosed within a substantially tight container, so as to cause
15 considerable sweating during the use of the skate.

This drawback is strongly felt by the users, since this sport is predominantly practiced in summer.

As a partial solution to this drawback, a skate with aligned wheels is commercially known and comprises a
20 plurality of internal ventilation openings.

However, in this type of skate it is necessary to use an innerboot made of transpiring fabric in order to allow adequate ventilation.

Even this solution has drawbacks, since in any case
25 the air does not optimally flow inside the sports shoe, thus limiting beneficial effects for the user.

Furthermore, the openings have fixed arrangements and

sizes and therefore the user is not able to vary the degree of ventilation flow according to his own specific requirements, which are due to the different types of sweating of different individuals, to the different types 5 of use of the skate, and to the particular season in which the skate is used.

Disclosure of the Invention

The aim of the present invention is to overcome the drawbacks described above in conventional skates by providing a sports shoe which allows optimum ventilation of 10 the user's foot.

Within the scope of the above aim, an important object is to provide a sports shoe in which the user can select the degree of ventilation according to his own specific requirements or according to requirements related to the 15 particular season in which it is used or to the particular type of use of the skate (slalom or speed skating).

Another important object is to provide a sports shoe wherein optimum comfort for the user can be achieved together with optimum ventilation.

20 Another important object is to provide a sports shoe in which ventilation can affect one or more parts of the foot and of the user's leg, said user being able to preset and vary these regions.

Another object is to provide a ventilated sports shoe 25 having low manufacturing costs, and which is structurally simple and easy to industrialize.

This aim, these objects and others which will become apparent hereinafter are achieved by a sports shoe particularly for skates, characterized in that it comprises

a plurality of through seats for engaging a plurality of pads which protrude at least inside said shoe.

Brief description of the drawings

Further characteristics and advantages of the present invention will become apparent from the detailed 5 description of a particular but not exclusive embodiment thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a side view of the sports shoe according to the present invention;

10 figure 2 is a lateral perspective view of the quarter of the shoe;

figure 3 is a detail view of the internal lateral surface of the shoe;

15 figures 4 and 5 are cross section views of the shoe, illustrating the shape of the through seats of the pads associable thereat, according to two different embodiments of the invention;

figure 6 is a side view of a shoe according to a further aspect of the invention.

Ways of carrying out the invention

20 With reference to the above figures, the reference numeral 1 designates a skate which comprises a frame 2 for supporting two or more mutually aligned wheels 3 and a shoe, or boot, 4.

The shoe is constituted by a quarter 6 articulated to 25 a shell 5.

A plurality of through seats 7 is formed both at the quarter 6 and at the shell 5.

One or more pads, designated by the reference numeral

8, can be arranged at one or more of said seats 7. The pads are made of soft material and protrude at least inside the internal lateral surface 9 of the shell 5 and of the quarter 6, so as to constitute the internal padding for the
5 shoe 4.

As an alternative, the pads 8 may be associated at the seats 7 by molding.

Their position is thus fixed and defined during design.

10 The pads 8 may have a plurality of holes 10 connected to the seats 7, so as to allow the flow of air in and out of the shell and the quarter.

15 Optionally, the pads 8 may be detachable by means of adapted elastically deformable wings 11 which engage the edges 12 of the seats 7 in a snap-together manner.

As an alternative, as shown in figure 5, the pads 8 may be perimetricaly provided with an annular groove 13 for engaging tabs 14 which protrude from the perimetric edges 12 of the seats 7.

20 A channel 15 for the circulation of air inside the shoe 4 is thus formed between a plurality of mutually adjacent pads 8.

25 The present invention allows the user to arrange the pads 8 at the desired seat 7, formed on the shell 5 or on the quarter 6, for example so as to select the points where air intakes from outside have to be provided, and this is done according to the type of sport to be practiced and to the season in which said practice occurs, as well as according to the individual transpiration characteristics
30 of the foot.

Furthermore, the air flow inside the shoe can be throttled by using pads 8 having holes 10 so as to create regions having a different amount of air inflow.

Furthermore, since the pads 8 protrude inside the internal lateral surface 9 of the quarter 6 and of the shell 5, on one hand they form the padding for the item of footgear, thus no longer requiring the use of an adapted innerboot, and on the other hand they define a channel 15 which allows the optimum outflow or inflow of air while maintaining optimum comfort for the user.

Figure 6 illustrate a sports shoe 104, according to a further aspect of the invention, comprising a quarter 106 articulated to a shell 105.

The shoe 104 comprises a plurality of through seats 107 adapted to engage a plurality of pads 108, substantially as described above.

In this case however, the number of seats 107 is reduced with respect to the number of seats 7 of the above described shoe 4.

The number of internal pads 108 is even lesser and each pad 108 engages more than one seat 107, as clearly illustrated in figure 6. This embodiment has the advantage of reducing the time for assembling the pads both at the production stage and for the user.

It has thus been observed that the invention has achieved the intended aim and objects, a sports shoe having been provided in which it is possible to obtain an optimum internal ventilation, and this is provided in a manner which is customized according to the specific requirements of the user or according to the sport practiced or to

weather conditions.

It is also possible to select regions of higher or lower air inflow or outflow and, by means of the channels 15 and, optionally, of the holes 10 formed on the pads 8, 5 to facilitate the air flow where it is mostly required.

All this allows optimum foot transpiration, thus improving user comfort.

Furthermore, the structure allows to eliminate the innerboot, thus reducing the manufacturing and assembly 10 costs of the sports shoe.

The sports shoe according to the invention is naturally susceptible to numerous modifications and variations, all of which are within the scope of the same inventive concept.

15 The dimensions and the materials which constitute the individual components of the shoe may also be the most pertinent according to the specific requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have 20 been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the scope of each element identified by way of example by such reference signs.

CLAIMS

1 1. Sports shoe particularly for skates, characterized
2 in that it comprises a plurality of through seats (7,107)
3 for engaging a plurality of pads (8,108) which protrude at
4 least inside said shoe.

1 2. Sports shoe according to claim 1, characterized in
2 that said pads are detachably associated with said seats.

1 3. Sports shoe according to claim 1, characterized in
2 that said pads are associated at said seats by molding.

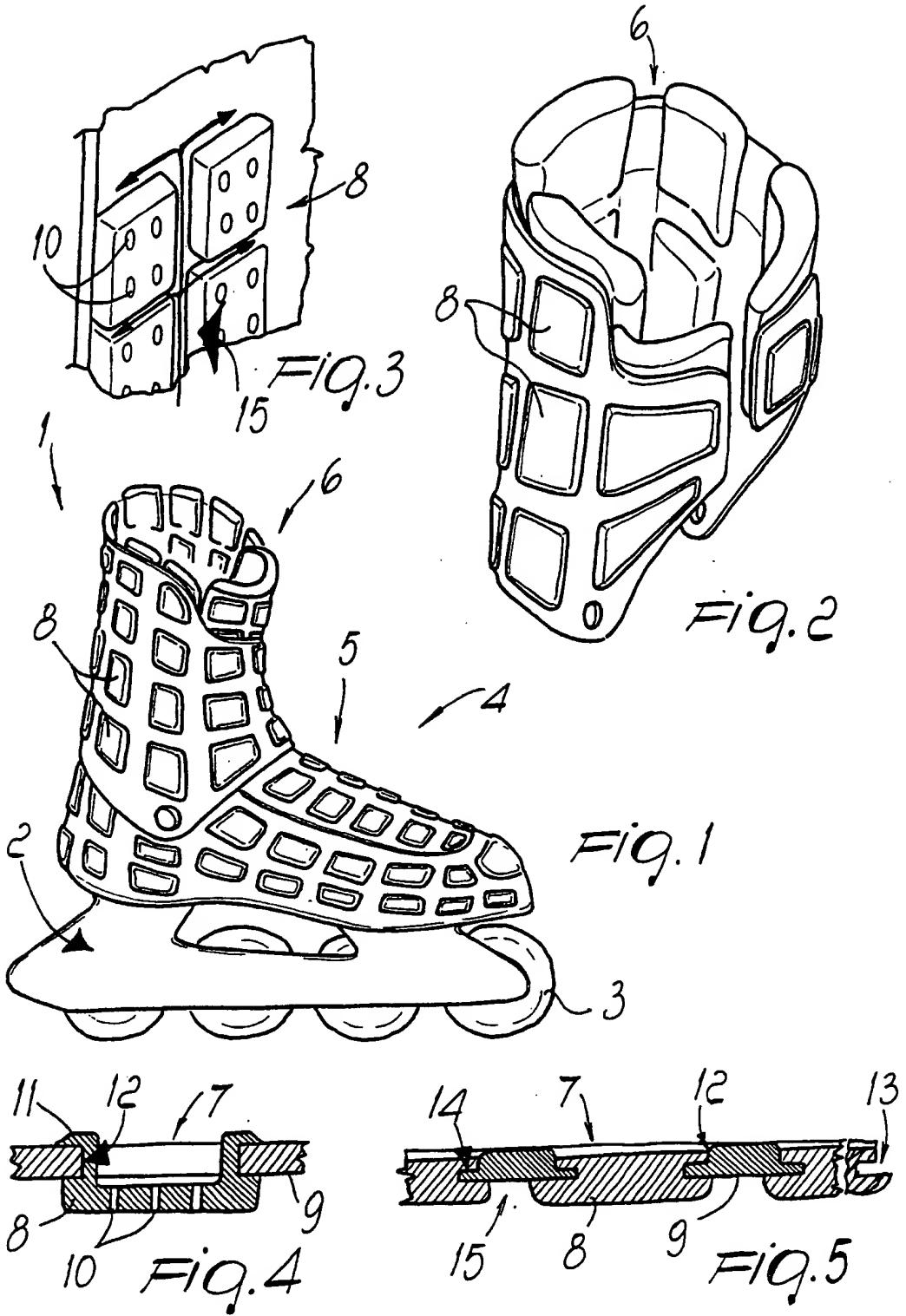
1 4. Sports shoe according to one or more of the
2 preceding claims, characterized in that holes (10) are
3 formed in said pads.

1 5. Sports shoe according to claim 2, characterized in
2 that said pads have elastically deformable wings (11)
3 adapted to engage the edges (12) of said seats in a snap-
4 together manner.

1 6. Sports shoe according to claim 2, characterized in
2 that said pads are perimetricaly provided with an annular
3 groove (13) adapted to engage tabs (14) protruding from
4 the edges of said seats.

1 7. Sports shoe according to one or more of the
2 preceding claims, characterized in that a channel (13) for
3 air circulation inside said shoe is formed between adjacent
4 pads (8).

1 8. Sports shoe, according to claim 1, characterized in
2 that each of said pads (108) engages more than one of said
3 seats (107).



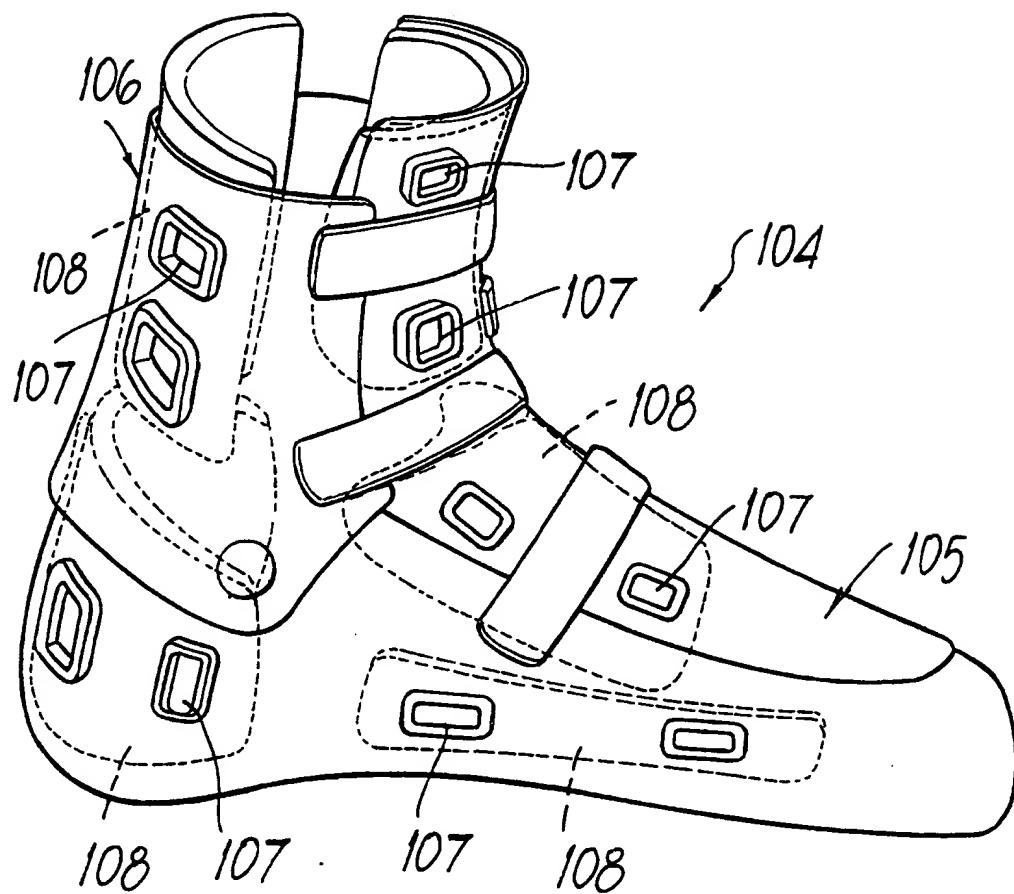


Fig. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 93/02432

A. CLASSIFICATION OF SUBJECT MATTER
IPC 5 A43B5/04 A43B5/00 A43B5/16 A43B19/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 5 A43B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US,A,4 724 627 (H. SISCO) 16 February 1988 see the whole document -----	1
A	CH,A,626 793 (RAICHLE) 15 December 1981 see the whole document -----	1

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- *'A' document defining the general state of the art which is not considered to be of particular relevance
- *'E' earlier document but published on or after the international filing date
- *'L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *'O' document referring to an oral disclosure, use, exhibition or other means
- *'P' document published prior to the international filing date but later than the priority date claimed

*'T' later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

*'X' document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

*'Y' document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

*'&' document member of the same patent family

1 Date of the actual completion of the international search 12 January 1994	Date of mailing of the international search report 14.02.94
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax (+31-70) 340-3016	Authorized officer DECLERCK, J

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/EP 93/02432

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
US-A-4724627	16-02-88	EP-A-	0358639	21-03-90
		WO-A-	8906916	10-08-89
CH-A-626793	15-12-81	NONE		